temporary weighting coefficients of the blocks within the same group in accordance with the graph of FIG. 3, for the groups of blocks respectively corresponding to the face portions, hair portions and cloth portions of the woman's and man's images 91a and 92a. Then, the weighting coefficient calculation circuit 27 obtains a mean value of the calculated temporary weighting coefficients of the blocks of the same group, and sets the obtained mean value as a weighting coefficient of the entire blocks of the same group. In this case, the weighting coefficient calculation circuit 27 assigns a larger weighting coefficient to each block corresponding to the face or hair portion of the woman's image 91a which is positioned in the center of the image, than the rest of the portions of the image. That is, those blocks corresponding to the man's image 92a or background image 93a are far from the center of the input image 90a, so that the weighting coefficient calculation circuit 27 assigns those blocks relatively small weighting coefficients.

The quantization step width calculation circuit 28 calculates the quantization step width in accordance with the storage amount in the transmission buffer, using the functions f(s) shown in FIG 4. After this, the quantization step width calculation circuit 28 divides this quantization step width for each block by a weighting coefficient of the block which is sent from the weighting coefficient calculation circuit 27, sets a resultant division as a quantization step width of the block, and sends the quantization step width to the quantization circuit 16.

The quantization circuit 16 quantizes the data sent from the orthogonal transformation circuit 15, by the quantization step width calculated by the quantization step width calculation circuit 28, and sends the quantized data to the encoding circuit 17. The encoding circuit 17 encodes the quantized data and data representing the motion vector into a variable-length code, and sends resultant data to the transmission buffer circuit 18. The transmission buffer circuit 18 stores the data sent from the encoding circuit 17, and sends the stored data to the transmission path at a constant rate in harmony with the transmission rate of the transmission path.

Accordingly, in the state where the view of FIG. 6A is continuously displayed, the image encoder 10 encodes the image data corresponding to the center portion, i.e. the face or hair portion of the woman's image 91a, of the image in a high degree of preciseness, and encodes the image data corresponding to the rest of portions of the input image 90a in a low degree of preciseness. After this, the image encoder 10 sends the encoded image to the transmission path.

Explanations will now be made to operations of the image encoder 10 in the case where the input image 90a of FIG. 6A shifts to the input image 90b of FIG. 6B.

In this case, the motion prediction circuit 13 detects the motion of each block corresponding to the woman's image and man's image, and writes the motion vector of each block into the motion vector value memory 21. The motion-vector-based block grouping section 22 arranges blocks of the input image into groups, based on each value of the motion vector written in the motion vector value memory 21. The motion-vector-based block grouping section 22 supplies the weighting coefficient calculation circuit 27 with grouping information (by motion vector) showing that the woman's image and man's image are each composed of a single group of blocks.

The weighting coefficient calculation circuit 27 calculates a weighting coefficient of each block of the input image in accordance with the graph of FIG. 2, based on the supplied grouping information. In the state where the input image 90a slightly shifts from its original position, a part of the man's image is not input to the camera. Thus, the number of blocks forming the woman's image is larger than the number of blocks forming the man's image. The weighting coefficient calculation circuit 27 assigns a large weighting coefficient to each block forming the woman's image, a relatively small weighting coefficient to each block forming the man's image and a very small weighting coefficient to each block forming the background image having no motion. If the entire man's image is input to the camera, the number of blocks forming the woman's image is substantially the same as the number of blocks forming the man's image. The weighting

coefficient calculation circuit 27 assigns substantially the same weighting coefficients to each block forming the woman's image and man's image. Further, as shown in FIG. 6B, if a portion of the woman's image is not input to the camera, the number of blocks forming the man's image becomes larger than the number of blocks forming the woman's image. Then, the weighting coefficient calculation circuit 27 assigns each block forming the man's image a larger weighting coefficient and each block forming the woman's image a smaller weighting coefficient.

The quantization step width calculation circuit 28 assigns a small quantization step width to each block forming the woman's image, a relatively large quantization step width to each block forming the man's image and a very large quantization step width to each block forming the background image, in the state where the input image 90a slightly shifts, based on the weighting coefficient assigned by the weighting coefficient calculation circuit 27. If the entire man's image is input to the camera, the quantization step width calculation circuit 28 assigns the quantization step width of substantially the same value to each block forming the woman's image and each block forming the man's image. If a portion of the woman's image is not input to the camera, as shown in FIG. 6B, the quantization step width calculation circuit 28 assigns a small quantization step width to each block forming the man's image and a large quantization step width to each block forming the woman's image.

As a result of this, in the quantized image data encoded by the encoding circuit 17, each block forming the woman's image is encoded in a high degree of preciseness and each block forming the man's image is encoded in a relatively low degree of preciseness, in the state where the input image 90a slightly shifts away from its original position. Each block forming the man's image is encoded gradually in a higher degree of preciseness, and blocks forming the woman's image and man's image are encoded approximately in the same degree of preciseness. After this, each block forming the woman's image is encoded gradually in a lower degree of preciseness, as the input image